



P/4169-7

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:

Akio OKAMIYA, et al.

Serial No.: 10/656,648

Filed: September 4, 2003

For: OIL REPELLING AGENT

Date: October 24, 2003

Group Art Unit:

Examiner:

Mail Stop Petition
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

PETITION TO MAKE SPECIAL PURSUANT TO
37 C.F.R. §1.102(d) and MPEP § 708.02 VIII

Sir:

Applicants, through their undersigned representative, hereby petition to make the present application special pursuant to 37 C.F.R. §1.102(d) and MPEP § 708.02 VIII.

In support of this Petition, Applicants submit the required fee of \$130.00 (Check No.: 13005), and a Declaration of Akio Okamiya, Director of the Research and Development Center for Minebea Co., Ltd., one of the assignees of the above application. Mr. Okamiya is also one of the inventors of the above application.

The Okamiya Declaration reports a search for relevant prior art references, and copies of prior art references. The declaration also describes the field of search by class and subclass, includes one copy of each of the references, and includes a discussion of the references, including how the invention is distinguishable from the references with the particularly required by 37 C.F.R. §1.111(b) and (c).

If the Patent and Trademark Office determines that the claims are directed at more than one invention, the Applicants will elect one invention for prosecution without traverse.

In the event the actual fee is greater than the payment submitted or is inadvertently not enclosed, or if any additional fee during the prosecution of this case is not paid, the Patent and Trademark Office is authorized to charge the underpayment to Deposit Account No. 15-0700.

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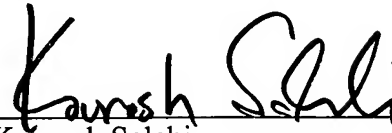
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Grant of the Petition is earnestly solicited.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Kourosh Salehi", is written over a horizontal line.

Kourosh Salehi

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**DECLARATION OF AKIO OKAMIYA
IN SUPPORT OF PETITION TO MAKE SPECIAL**

I, AKIO OKAMIYA, declare that:

1. I am the Director of the Research and Development Center of one of the assignee's Minebea Co., Ltd. I am also of one of the inventors identified in the above application.

2. My declaration is made in support of the Applicants' Petition to Make Special pursuant to 37 C.F.R. §1.102 and MPEP §708.02.

3. The present application is for a utility patent directed to an oil repelling agent which, in an exemplary embodiment of the invention, is used to form an oil repelling film on selected areas of a fluid dynamic pressure bearing device. In an embodiment of the invention, the oil repelling agent is baked to form an oil repelling film. In an embodiment of the invention, the oil repelling agent consists of a fluorine-based polymer and 100 PPM - 400 PPM of a UV coloring agent. The UV coloring agent is used to allow easier observation of the quality of the coverage by the oil repelling agent after it has been applied to a selected area, but before the oil repelling agent

has been baked to form an oil repelling film. One advantage of the oil repelling agent according to an embodiment of the invention is its low outgas quantity before and after the formation of the oil repelling film. The oil repelling agent is disclosed with more detail in the subject patent application.

4. I understand that a search was commissioned for pertinent prior art relating to the invention of the above application. Submitted with the present Petition is a listing of each of the references uncovered in the search, along with copies of those references.

5. I understand that the search was conducted in the following areas, which were deemed to contain subject matter of interest to one or more of the features of the invention:

A. Classification Search

<u>Class</u>	<u>Subclasses</u>	<u>Description</u>
310/		ELECTRICAL GENERATOR OR MOTOR STRUCTURE
	90	...Bearing or air-gap adjustment or bearing lubrication
360/		DYNAMIC MAGNETIC INFORMATION STORAGE OR RETRIEVAL
	97.01	.Disk record
	99.08	..Rotational drive detail
369/		DYNAMIC INFORMATION STORAGE OR RETRIEVAL
	263	.. Mounting structure for support or motion producing assembly (e.g., vibration damping)
384/		BEARINGS
	100	.Fluid bearing
	107	..Radial and thrust
	114	..Radial
	119	...Resilient mounting member or seal
	124	...Resilient mounting member or seal

6. I understand that the following documents were found in the search:

A. References found through search

<u>Patent No.</u>	<u>Inventor(s)</u>	<u>Publication Date</u>
4,960,827	Miyazaki et al.	October 2, 1990
6,196,722 B1	Asada et al.	March 6, 2001
6,211,592 B1	Ichiyama	April 3, 2001
<u>Patent Application Publication No.</u>	<u>Inventor(s)</u>	<u>Publication Date</u>
2002/0050766 A1	Mori et al.	May 2, 2002
2002/0173431 A1	Hirata	November 21, 2002

Another reference is JP Publication No. 2001-027242 published on January 30, 2001, and disclosed in the subject patent application.

7. The following constitutes a summary of the above references:

JP Publication No. 2001-027242

JP Publication No. 2001-027242, English translation enclosed, discloses a method for accessing the quality of the coverage of an oil repelling agent when applied to a selected portion of a dynamic pressure bearing device. The method disclosed by this reference involves using a UV coloring agent from the coumarin system in combination with a fluorine-based polymer to obtain an oil repelling agent for dynamic pressure bearing devices. The UV coloring agent is used to facilitate the assessment of the quality of the coverage by the oil repelling agent.

U.S. Patent No. 4,960,827

Patent No. 4,960,827 discloses a curable resin composition comprising a fluorine-based polymer. The disclosed composition is useful in the formation of an oil and water repelling film. The curable resin composition includes a fluoro-olefin polymer, a curing agent, and a polyfluorocarbon chain-containing compound. Pigments or other coloring agents may be added to

improve the distinctiveness of the composition (see column 1, lines 4-14; and column 5, lines 1-22).

Published U.S. Application No. 2002/017343 A1

Published U.S. patent application No. 2002/017343 A1 discloses a bearing unit in a disk drive. The disclosed bearing unit includes a fluorine-based oil repelling film. Oil repelling film 12 is coated on the end face of sleeve 5 near the gas-liquid interface of lubricant and taper portions 2a, 2b of stationary shaft 2. Coloring may also be applied to the oil repellent film 12 for distinguishing from stationary shaft 2 or the sleeve 5 (see page 2, paragraph 27; and page 3, paragraph 47).

U.S. Patent No. 6,196,722

Patent No. 6,196,722 B1 discloses a hydrodynamic bearing. The hydrodynamic bearing uses a fluoro-resin film as the oil repellent to prevent the lubricant from flowing out of the bearing.

U.S. Patent No. 6,211,592

Patent No. 6,211,592 discloses a hard disk. The hard disk includes a dynamic-pressure bearing device that uses a fluorochemical oil repellent to prevent lubricant migration.

Published U.S. Application No. 2002/0050766

Published U.S. patent application No. 2002/0050766 A1 discloses a bearing unit. The disclosed bearing unit uses a fluorine-containing polymer as an oil repelling agent to prevent oil from leaking out of the bearing.

8. I believe that the prior art, taken alone or in combination, does not disclose or suggest the invention. None of the references teach, suggest or recognize the benefits of using a UV coloring agent in the amounts set forth in the application. Specifically, none of the references teach, suggest or recognize the benefits of using 100 PPM - 400 PPM of UV coloring agent in an oil repelling agent, e.g., the benefit of low outgas emission as discussed above in paragraph 3 and in the subject patent application. The invention, therefore, is both novel and nonobvious over the remaining references.

9. Based upon the foregoing observations about the prior art, it is my opinion that the claims in the present application are allowable over the prior art.

10. I further declare under penalty of perjury under the laws of the United States of America that all statements made herein of my own knowledge are true, except for those statements made on information and belief, which are believed to be true; and further that these statements are made with the knowledge that willful, false statements and the like so made are punishable by fine or imprisonment, or both, under §1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of this declaration, this application and any patent resulting therefrom.

Dated: Sep. 05-2003 
Akio Okamiya

DAM:KS:ck/sds

Enclosures: References
 Form PTO-1449